

Amendment to the Claims:

This listing of claims will replace all versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 25 (Cancelled)

26. (New): An apparatus, comprising:

a first amplifier having an input, an output and a variable gain adjustment circuit coupled to a signal at a first frequency;

a circuit for converting the signal from the first frequency to a second frequency coupled to the output of the first amplifier;

a second amplifier having an input and an output and a bias adjustment circuit, the input of the second amplifier is coupled to the circuit for converting receiving the converted signal at the second frequency; and

a feedback circuit coupling the output of the second amplifier to the gain adjustment circuit of the first amplifier;

wherein the variable gain adjustment circuit is operative to adjust the gain of the first amplifier based on a selected power level; and

wherein the bias adjustment circuit is operative to adjust the bias of the second amplifier based on the selected power level.

27. (New): A circuit according to claim 26, the feedback circuit further comprising a detector.

28. (New): A circuit according to claim 27, the feedback circuit further comprising a -17 dB coupler coupled between the output of the second amplifier and the detector.

29. (New): A circuit according to claim 28, wherein the detector comprises a Schottky diode.

30. (New): A circuit according to claim 27, the feedback circuit further comprising:
an analog to digital converter coupled to the detector;
a digital comparator having first and second inputs, the first input is coupled to the analog to digital converter, the second input receiving a signal representative of a desired power level, the comparator producing an output representative of an error signal corresponding to the difference between signals received on the first and second inputs;
wherein the output of the digital comparator is coupled to the variable gain adjust circuit of the first amplifier, the variable gain adjustment circuit is responsive to the output of the digital comparator to adjust the gain of the first amplifier.
31. (New): An apparatus according to claim 30, further comprising a digital to analog circuit coupled between the output of the digital comparator and the variable gain adjustment circuit.
32. (New): An apparatus according to claim 26, wherein the bias adjustment circuit is a current adjustment circuit.
33. (New): An apparatus according to claim 32, wherein the bias adjustment circuit is operative to adjust current drain of the second amplifier based on the selected power level.
34. (New): A method, comprising:
amplifying a signal at a first frequency by a first amplifier having a variable gain control;
converting the amplified signal to a second frequency;
amplifying the converted signal at the second frequency by a second amplifier having a variable bias;
feeding back the converted, amplified signal from the second amplifier at the second frequency to the variable gain control of the first amplifier.
adjusting the gain of the first amplifier based on a selected power level; and
adjusting the bias of the second amplifier based on the selected power level.

35. (New): A method according to claim 34, further comprising passing the output of the second amplifier through a detector.

36. (New): A method according to claim 35, further comprising passing the output of the detector through a -17 dB coupler.

37. (New): A method according to claim 36, wherein the detector comprises a Schottky diode.

38. (New): A method according to claim 35, the feeding back step further comprising:
converting the signal from the detector to a digital signal;
comparing the converted signal with a signal representative of the selected power level, thereby generating an error signal based on comparing; and
adjusting the gain of the first amplifier based on the error signal.

39. (New): A method according to claim 38, further comprising converting the error signal from a digital signal to an analog signal.

40. (New): An apparatus, comprising:
means for amplifying a signal at a first frequency, the means for amplifying having a means for variable gain control;
means for converting the amplified signal to a second frequency;
means for amplifying the converted signal at the second frequency by a second amplifier, the means for amplifying the converted signal having a variable bias;
means for feeding back the amplified, converted signal from the means for amplifying the converted signal at the second frequency to the means for variable gain control of the means for amplifying a signal at a first frequency;
means for adjusting the gain of the first amplifier based on a selected power level;
and
means for adjusting the bias of the second amplifier based on the selected power level.

41. (New): An apparatus according to claim 34, further comprising means for detecting.

42. (New): An apparatus according to claim 41, the means for feeding back step further comprising:

means for converting the signal from the detector to a digital signal;

means for comparing the converted signal with a signal representative of the selected power level, thereby generating an error signal based on comparing; and

means for adjusting the gain of the first amplifier based on the error signal.

43. (New): An apparatus according to claim 42, further comprising means for converting the error signal from a digital signal to an analog signal.